



More Favorable Prototypes are Associated with Smoking and Vaping Willingness in Emerging Adult College Students: Applying the Prototype Willingness Model to Nicotine Use



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INTRODUCTION

Both smoking (cigarettes) and vaping (e-cigarettes) have detrimental health effects. Emerging adults have particularly high prevalence rates (Patrick, Miech, Johnston, & O'Malley, 2024), with over a quarter of undergraduate students having engaged in nicotine use (American College Health Association, 2024). The Prototype Willingness Model provides a framework for understanding how social reactivity leads to health risk behavior via prototypes, images of a typical person engaging in a behavior, and behavioral willingness, openness to engaging in a behavior when a social opportunity arises. (Gibbons et al., 1995). Favorability of substance use prototypes informs behavioral willingness, which in turn predicts future substance use in adolescents (Todd et al., 2016; van Lettow et al., 2015); however, less is known about vaping and smoking behavior in emerging adults.

Both smoking and vaping are sources of nicotine dependence among emerging adults, but they perceive vaping as more socially acceptable (Romm et al., 2024). The present study fills a gap in the literature by comparing emerging adults' smoker and vaper prototype favorability and smoking and vaping willingness, as well as examining the relationship between prototypes and willingness for both substances.

HYPOTHESES

1. Vaping prototype favorability and willingness will be higher than smoking favorability and willingness.
2. Prototype favorability will be positively associated with willingness for both substances.



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METHOD

PARTICIPANTS & PROCEDURE

239 college students participated in an anonymous online survey for \$10 dining dollars ($M_{age} = 20.02 [1.25]$, 18-24; 84.1% female; 84.4% domestic students; 58% white; past use 32.2% e-cigarettes, 20.5% cigarettes).

MEASURES

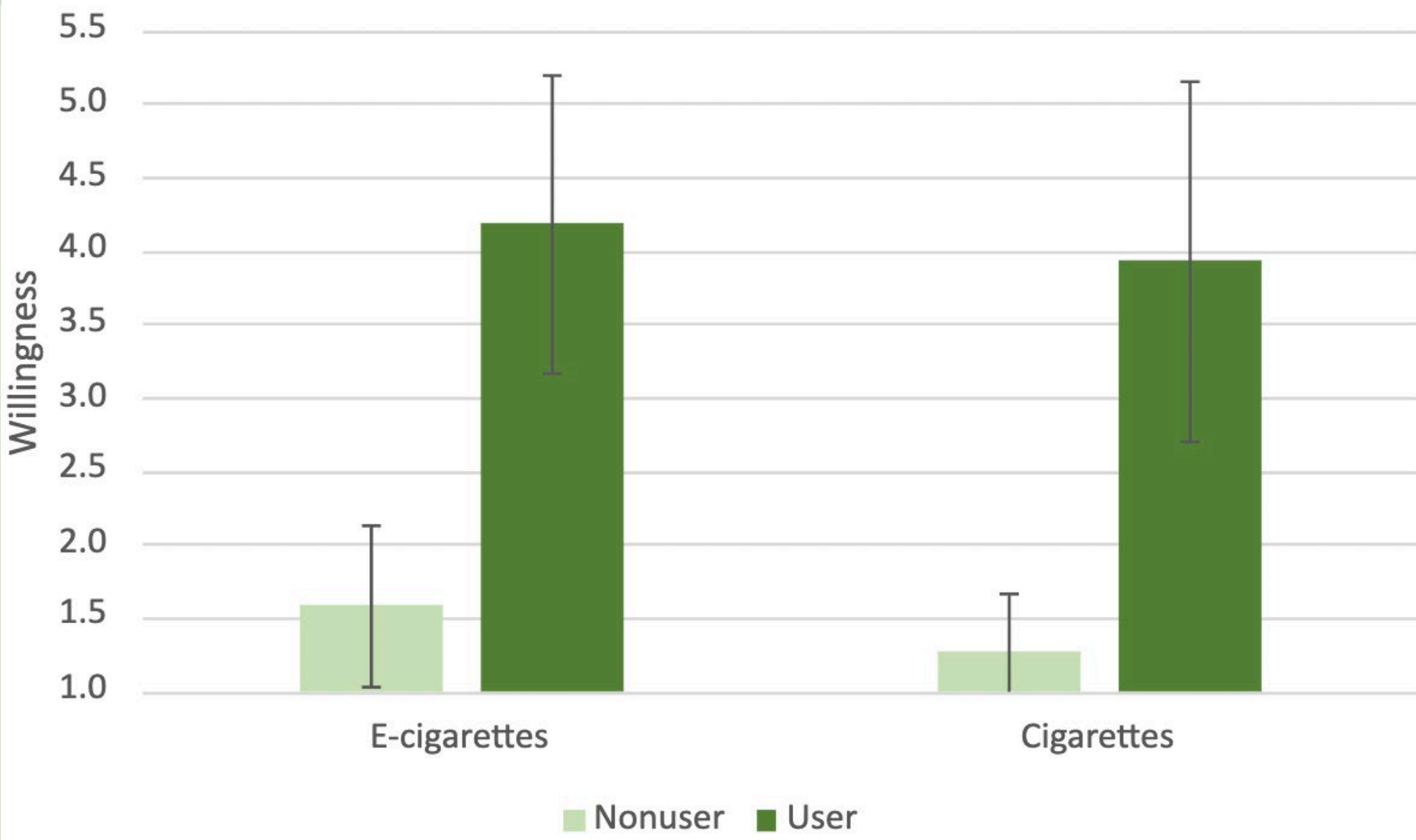
Smoking/vaping prototypes- "Think about the type of person your age, gender, and racial/ethnic identity who (vapes/smokes)..... indicate how much this person is:" smart, popular, attractive, fun, mature, wealthy, inconsiderate (R), healthy, trendy, disgusting (R), stressed (R), social (1 = not at all, 7 = extremely; averaged, ecig $\alpha = .805$, smk $\alpha = .84$).

Smoking/vaping willingness- "Suppose you were with a group of friends at a party... if your friend were to offer an (e)cigarette to you, how willing would you be to...have a puff of (try) an unflavored (e) cigarette... (1 = not at all willing, 7 = very willing; averaged, ecig 8 items $\alpha = .976$, smk 4 items $\alpha = .979$; median split due to positive skew).

Smoking/vaping user status- any level of past year use (0 = none, 1 = any).

Demographics: gender identity, sexual attraction, age, race/ethnicity, social class, international/domestic student status, class year, semesters of coursework/enrollment completed

RESULTS



Vaping willingness was higher than smoking willingness ($p = .007$). Past year nicotine users rated willingness for both substances higher than non-users ($p < .001$). No interaction ($p = .788$).

HYPOTHESIS 2

High vaping/smoking willingness and prototype favorability was associated with user status ($ps \leq .014$), but otherwise bivariate analyses revealed no significant associations ($p \geq .05$) among demographic variables with both prototypes and willingness. Thus, demographic variables were not included as controls in the main analysis.

Logistic Regression for E-cigarette Willingness

	B	S.E.	Sig.	Exp(B) (95% CI)
E cigarette user	2.065	.342	<.001	7.882 (4.030, 15.416)
E cigarette prototype	.561	.195	.004	1.753 (1.195, 2.571)
Constant	-3.019	.834	<.001	.049

Logistic Regression for Cigarette Willingness

	B	S.E.	Sig.	Exp(B) (95% CI)
Cigarette user	3.040	.510	<.001	20.903 (7.700, 56.744)
Cigarette prototype	.419	.201	.037	1.520 (1.026, 2.252)
Constant	-2.452	.762	<.001	.049

For all analyses, functional results persisted when excluding participants who failed an attention check (19.5%).

DISCUSSION

My hypotheses were supported. Vaping prototypes and willingness are higher than smoking prototypes and willingness, with this direct comparison bringing together similar conclusions from previous studies that examine them individually (e.g., Butler et al. 2020; van den Eijnden 2006). For both smoking and vaping, more favorable prototypes are significantly associated with willingness, extending prior findings focused on the Prototype Willingness Model and smoking/vaping behavior (van Lettow et al., 2015; Todd et al. 2016), with this study being among the first to look at the PWM and vaping.

The study had several strengths ensuring internal validity: reliable constructs, a sufficient sample size, non-parametric tests to address non normality, an attention check, and extensive examination of potential covariates. Limitations included the use of a survey resulting in the possibility of self-report bias, very specific sample, so results are not necessarily diverse/applicable to general population, and cross-sectional design, so directionality is unknown. Next steps for future research may include using a longitudinal design to further explore both smoking and vaping prototype factors and what informs them (media exposure, early childhood experiences, etc.; see Gerrard et al., 2005; Lazard et al., 2021). The findings from this study can be applied to college health initiatives focused on addressing prototypes and using them to discourage use, as findings illustrate motivators of emerging adults' perception and behavior regarding smoking/vaping.

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